

Claims

[c1]

An apparatus for removing kernels from a husked ear of corn that is rotating about its longitudinal axis, comprising:

a hollow tube open at both ends;

a means for cutting the kernels from the ear; and

a means for suspending the cutting means resiliently inside the tube so that when the husked ear of corn is inserted into the tube, the cutting means is pressed against the husked ear of corn by the suspending means.

[c2]

The apparatus of claim 1 wherein:

said cutting means comprises a partial cylinder further comprising a grater, the grater further comprising sharp points extending inwardly from the partial cylinder;

the axis of the partial cylinder is parallel to the axis of said hollow tube; and

said suspending means comprises at least one helical spring interposed between the convex side of the partial cylinder and the inside of said hollow tube, the spring held in compression by at least one threaded fastener, the fastener extending from inside the partial cylinder, through the partial cylinder, through the center of at least one helical spring, through the wall of said hollow tube, and into a threaded nut.

[c3]

The apparatus of claim 2 further comprising:

a mounting bracket;

a means for husking corn ears; and

a means for affixing corn ears coaxially to a power driver.

[c4]

The apparatus of claim 3 wherein:

said mounting bracket connects said hollow tube with said means for husking corn ears; and

said affixing means comprises an elongate metal screw having an axis and comprising tapered threads at one end, an unthreaded shank at the other, and a flat metal collar fixed to the screw perpendicular to the axis between the tapered threads and the unthreaded shank.

[c5]

The apparatus of claim 4 wherein:

said mounting bracket is shaped to rest on a horizontal surface and be fastened to said hollow tube and said husking means; and
 said husking means comprises a second hollow tube open at both ends, the second hollow tube having fixed to its inner wall a bristle brush, the bristle brush being oriented within the second hollow tube so that its bristles point toward the center of the second hollow tube.

[c6]

The apparatus of claim 5 wherein:

said mounting bracket holds said hollow tube at a height above said horizontal surface to allow space between said hollow tube and said horizontal surface, and at an acute angle A with the ground such that the axis of said hollow tube substantially aligned with the forearm of a user when the user is positioned before it; and

said mounting bracket holds said second hollow tube below said hollow tube and at an acute angle with the ground greater than angle A so that the axis of said second hollow tube is substantially aligned with the forearm of the same user when the user rotates the user's forearm down at the elbow.

[c7]

An apparatus for husking and shelling an ear of corn, the ear of corn being rotated axially by a power driver, the power driver being held by one free limb of a person, the apparatus comprising:

- a) means for fixing an ear of corn coaxially on the power driver;
- b) a first hollow tube, open at both ends, having inside the first hollow tube a partial cylinder of a radius sized to fit the surface of a typical husked ear of corn, the partial cylinder being resiliently attached inside the first hollow tube by at least one spring so that when a husked ear of corn is inserted into the first hollow tube, the partial cylinder is pressed against the surface of the husked ear of corn by the at least one spring;
- c) a second hollow tube, open at both ends, having mounted inside it fixedly a bristle brush, the bristle brush being oriented so that the bristles point towards the center of the second hollow tube; and
- d) a rigid bracket fastened to the outer surfaces of the first and second hollow tubes, the bracket being shaped to rest on a supporting surface.

- [c8] The apparatus of claim 7 in which:
said bracket is also shaped to hold said first and second tubes in fixed positions relative to said person such that said person can insert said ear of corn into each of said tubes by moving only said one free limb.
- [c9] A method of husking and shelling an ear of corn with a power driver, the power driver having a chuck, the chuck gripping a mandrel by a shank, the method comprising the steps of:
- a) manually debutting an ear of corn to form a flat end perpendicular to the long axis of the ear;
 - b) screwing the mandrel into the flat end of the ear, the mandrel comprising means for fastening the ear coaxially to the power driver;
 - c) actuating the power driver;
 - d) inserting the ear longitudinally into a husking tube while the power driver is running, the husking tube comprising an inner husking tube wall and means for frictionally removing the husk and silk from the ear;
 - e) moving the ear axially in and out of the husking tube while the power driver is running, until the husk and the silk is removed from the ear;
 - e) withdrawing the husked ear from the husking tube;
 - f) inserting the husked ear into a shelling tube while the power driver is running, the shelling tube comprising an inner shelling tube wall and means for holding a grater in contact with the ear;
 - g) moving the ear axially in and out of the shelling tube while the power driver is running, until the kernel material is removed from the ear and leaving a cob; and
 - h) withdrawing the cob from the shelling tube, stopping the power driver, and unscrewing the mandrel from the cob.
- [c10] The method of claim 9 in which:
said means for fastening said ear coaxially to said power driver comprises a tapered screw at the end of said mandrel opposite said shank, with a flat collar in between the screw and said shank to fix the depth to which the screw drives into said flat end of said ear of corn;
said means for frictionally removing said husk and silk from said ear comprises

a bristle brush affixed to said inner husking tube wall, the bristles pointing substantially towards the center of said husking tube;

said grater comprising a piece of sheet metal cut to fit the substantially cylindrical contour of said husked ear, the piece of sheet metal having a concave side and further comprising sharp points punched out towards the concave side; and

said means for holding said grater in contact with said ear comprises a partial cylinder resiliently fixed inside said shelling tube, the partial cylinder having a convex side and a concave side, the convex side having at least one spring interposed between it and said inner shelling tube wall, the concave side having a concave radius large enough to accommodate a large husked ear of corn, the concave side having said grater affixed to it, the spring being of a length to hold said grater at a distance from said inner shelling tube wall opposite the spring, the distance being less than the diameter of a said ear of corn, so that when said ear of corn is inserted into said shelling tube, the convex side of said partial cylinder is pushed into the spring and said sharp points are pushed into said ear.